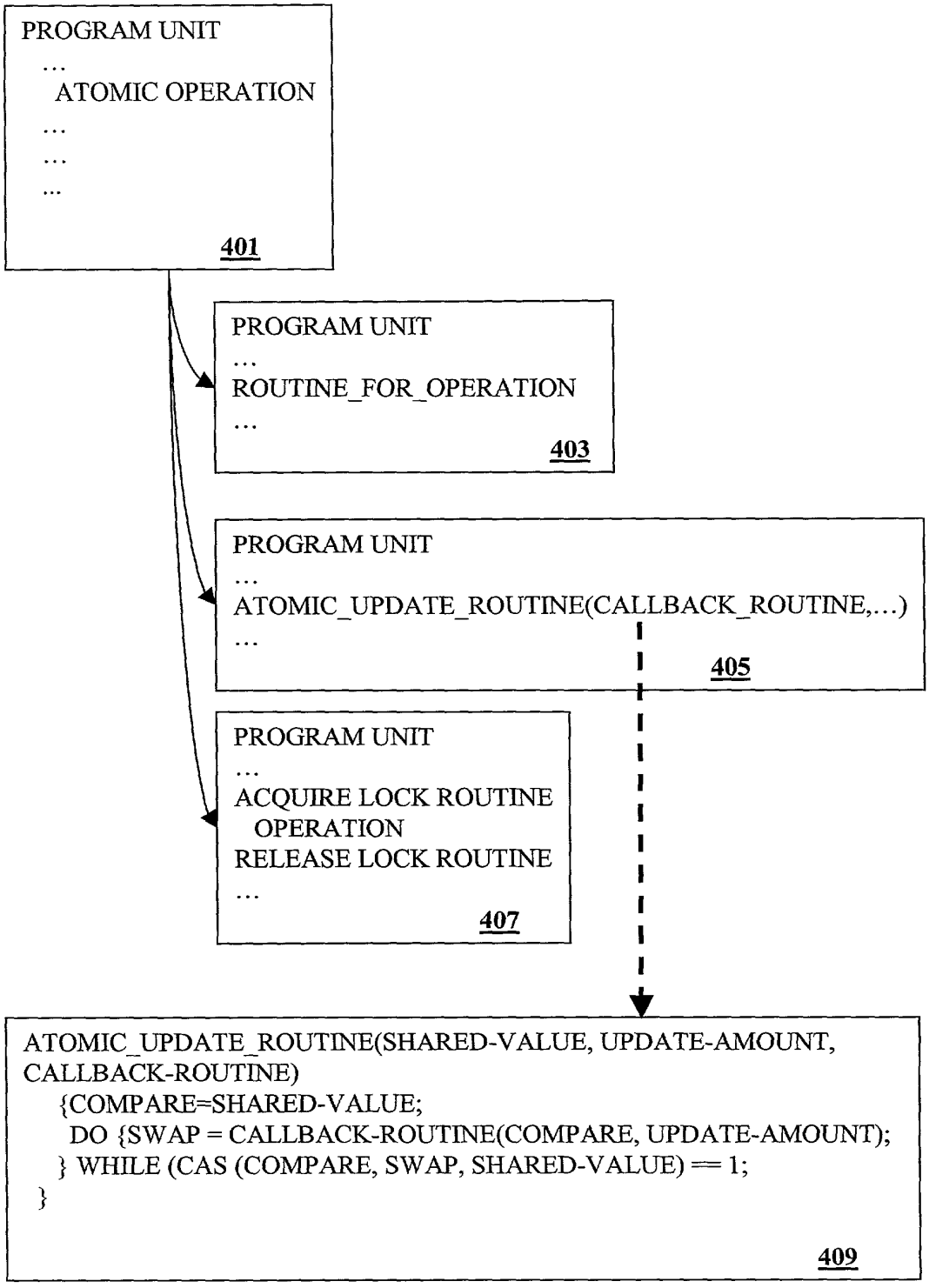
PROGRAM UNIT
...
ATOMIC OPERATION
...
...
...
401
PROGRAM UNIT
...
ROUTINE_FOR_OPERATION
...
403
PROGRAM UNIT
...
ATOMIC_UPDATE_ROUTINE(CALLBACK_ROUTINE,...)
...
405
PROGRAM UNIT
...
ACQUIRE LOCK ROUTINE
OPERATION
RELEASE LOCK ROUTINE
...
407
ATOMIC_UPDATE_ROUTINE(SHARED-VALUE, UPDATE-AMOUNT, CALLBACK-ROUTINE)
{COMPARE=SHARED-VALUE;
DO {SWAP = CALLBACK-ROUTINE(COMPARE, UPDATE-AMOUNT);
} WHILE (CAS (COMPARE, SWAP, SHARED-VALUE) == 1;
}
409

FIG. 4

PDSTOP: 8642766D

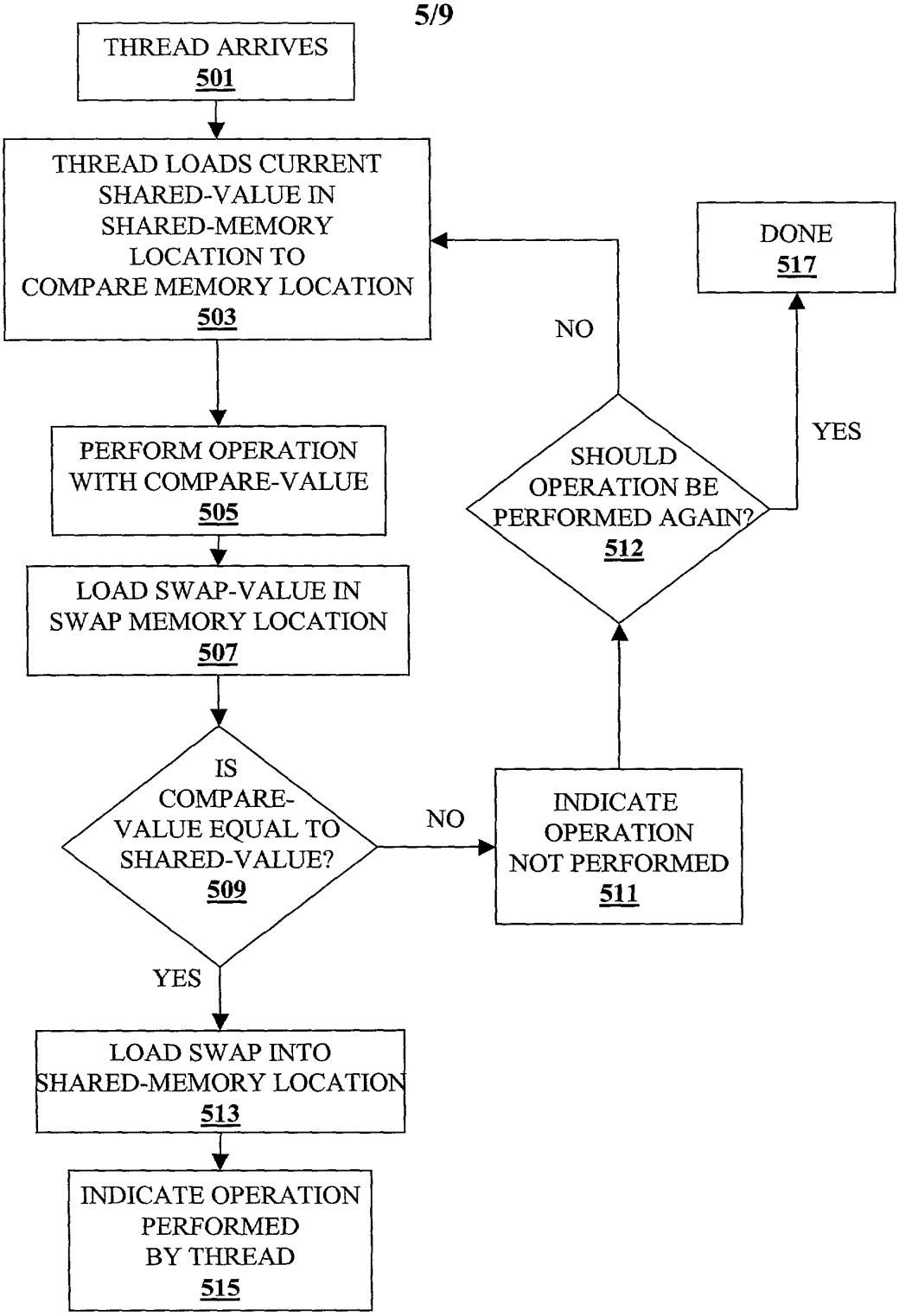

FIG. 5

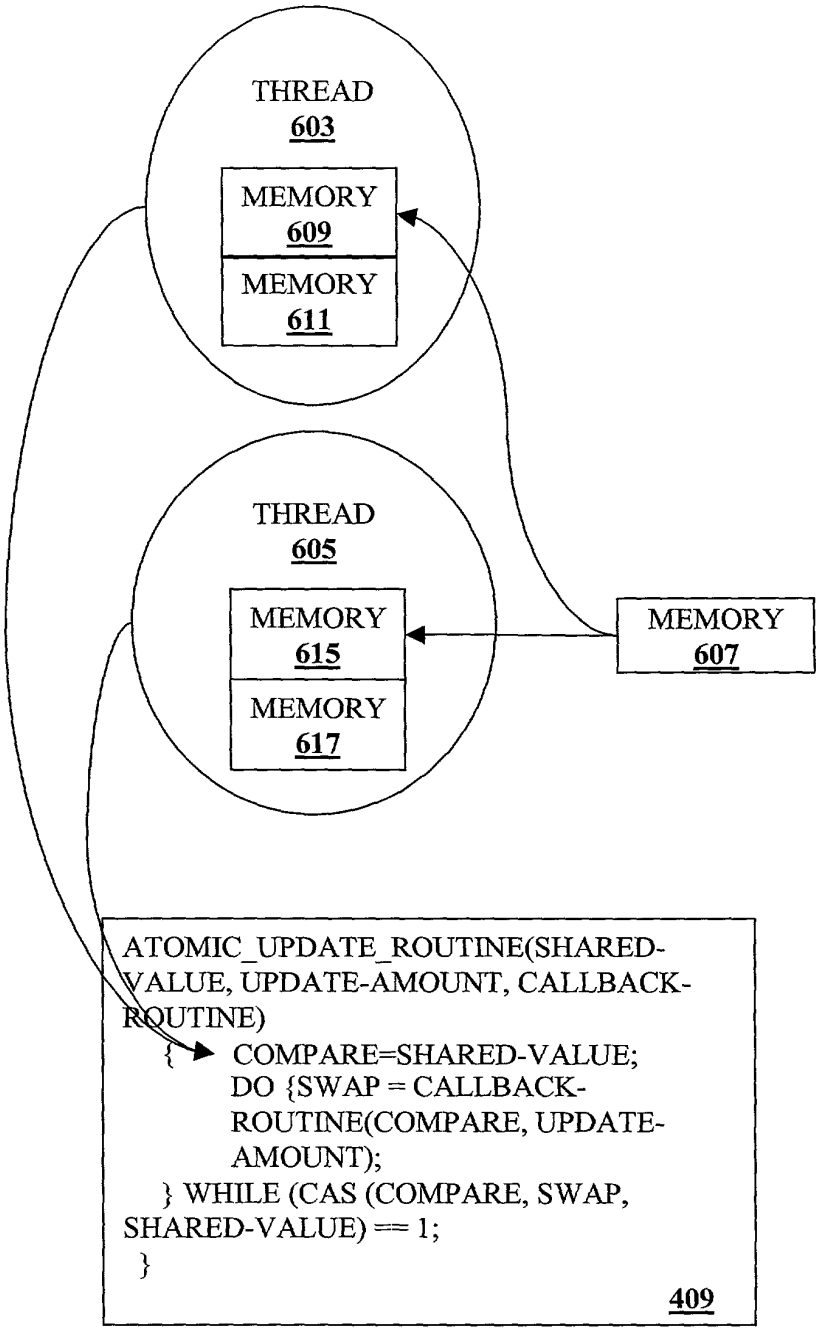
THREAD
603
MEMORY
609
MEMORY
611
THREAD
605
MEMORY
615
MEMORY
617
MEMORY
607
ATOMIC_UPDATE_ROUTINE(SHARED-VALUE, UPDATE-AMOUNT, CALLBACK-ROUTINE)
{
COMPARE=SHARED-VALUE;
DO {SWAP = CALLBACK-ROUTINE(COMPARE, UPDATE-AMOUNT);
} WHILE (CAS (COMPARE, SWAP, SHARED-VALUE) == 1;
}
409

FIG. 6A